

So Lawn

Each year American homeowners, searching for green perfection, apply more than a million tons of toxic fertilizers and pesticides to their yards. Unfortunately, a lot of those chemicals run off into the Mississippi River and other waterways. Fortunately, there's a gentler, easier alternative.

By James McCommons

For years George Tyler blanketed his lawn with commercial fertilizers, believing the chemicals would compensate for the poor clay soils and construction backfill in the Bloomington, Minnesota, subdivision where he lived. Then Tyler, a sales engineer for an Internet services firm, discovered corn gluten meal, a byproduct of the process that makes high-fructose corn syrup. Gluten, which is sold as cattle feed and an organic fertilizer, kills germinating weeds but doesn't damage established turfgrass.

Tyler began applying the gluten to his lawn twice a year. Several summers later he went on a two-week vacation in the middle of a severe drought. When he returned he found he had become the envy of his hose-crazy neighborhood. "There were almost 100 homes in that subdivision," he says. "When I came back from vacation, all of their lawns were burnt to a crisp. Mine was green—and it hadn't been watered."

It turned out the gluten allowed earthworms and red worms—previously killed by chemicals—to once again tunnel beneath the lawn, breaking up and aerating the clay, and adding their castings to the soil, which boosted the volume of organic material. Because gluten is a slow-release fertilizer that feeds plants gradually, it also may have encouraged deeper root growth. "If you have deep root growth and organic matter in the soil, you can go a while without watering," says Matthew Stephens, an area agent at the Louisiana State University Agricultural Center. "Lawns are a lot tougher than people think."

Tyler's ingenuity yielded more than an emerald lawn—it helped protect the Mississippi River, about 12 miles away as the crow flies. Each year homeowners apply more than a million tons of fertilizers and 163 million pounds of pesticides to their yards, and a lot of those chemicals eventually run into the Mississippi and other waterways. These toxic substances kill beneficial insects, contaminate drinking water, lead to algae blooms and fish die-offs, and help create ideal conditions for what's known as the "Dead Zone," off the Louisiana coast.

Creating a truly healthy and full lawn is not as challenging as you might think—in fact, it may even make your life easier. Just follow these easy steps.

10 Steps to a Healthy Lawn

1. Adjust Your Attitude

Lush lawns flourished long before chemical fertilizers and pesticides became widely available following World War II, even if those lawns weren't the verdant fairways promoted by today's lawn companies. Flawless greens require lots of chemicals, watering, and care. And because they're unnatural, they're neither drought- nor pest-resistant. You can learn to love a lawn that's less than an emerald carpet.

2. Promote Diversity

A lawn should not be a monoculture, a single species of turfgrass, where all other plants are relegated to weed status. For example, lawn companies label clover an invader to help them sell weed-and-feed products and other broadleaf herbicides. In fact, before backyard chemicals came on the scene, clover was a common ingredient in lawns and an important plant in fixing nitrogen for turfgrass. Be it a cornfield or a lawn, a monoculture is always unnatural and hard to maintain. Seed your yard with a mix of species, such as white clover, fescues, and perennial ryegrass, and with other plants and grasses suited to your region's climate and soils. Mixed-species lawns are better able to resist pests and tolerate drought.

3. Go Organic

If a pest is attacking your turf, consider this: Pesticides are indiscriminate—they kill beneficial bugs along with the so-called bad ones. Pesticides also wipe out up to 90 percent of the earthworms, as well as the fungi, bacteria, nematodes, and other organisms that make your soil healthy. Many pesticides are toxic to amphibians and fish, which means they're especially pernicious when used near streams, lakes, and wetlands. What's more, if you use pesticides on your lawn, they will end up inside your home—on children's clothing and in house dust. There is usually an organic alternative. For example, milky spore powder, available at lawn and garden stores and at nurseries, is a naturally occurring bacterium that kills lawn grubs. You can also plant grasses that contain endophytes, a fungus that naturally repels some common lawn pests such as cinch bugs and armyworms.

4. Get Past the Grass

Smooth, closely cropped carpets of grass currently cover more than 20 million U.S. acres—a number that will continue to rise as cities sprawl into undeveloped areas. Although such a lawn might absorb runoff better than asphalt or concrete, it is a poor alternative to a forest or prairie. Think about how you use your yard. You can replace unnecessary lawn with native groundcover alternatives such as phlox, bearberry, and dwarf dogwood, or with perennials, shrubbery, and trees, all of which will trap nutrients before they reach waterways. Front yards are often ideal places to start replacing grass. Mostly decorative, they are close to sidewalks, streets, and gutters, so their runoff usually goes right down the drain and winds up in waterways.

5. Mow High

Don't give your lawn a crew cut. Let your grass grow 3 to 4 inches high. It will look fuller, and the shade will conserve water and deter weeds—such as crabgrass—that need full sun to germinate. Mowing short also stresses the lawn and makes it less drought-resistant. Try mechanically aerating your turf by poking holes in it with a garden fork. (You can also lease a walk-behind aeration machine at a local rental center.) Aeration loosens compacted soils, allows water to penetrate deeper, encourages earthworms, and helps the turf spread.

6. Shake the Rake

By leaving grass clippings on your lawn and letting them decompose, you reduce fertilizing requirements by up to 50 percent. A light layer of compost raked over the lawn once or twice a year will supply the rest of a lawn's fertilizer needs. Compost also releases nutrients slowly. If you must rake clippings, put them in a compost bin, where they provide a shot of nitrogen, heat up the pile, and accelerate decomposition.

7. Easy Does It

Plants can take up only so many nutrients at one time; the rest percolate down to the water table, end up in surface waters, or build up in the soil, says Stephens. He has known homeowners to dump whole bags of chemical fertilizer on narrow strips of lawn between a sidewalk and street. (The first rain takes most of it down the gutter and into rivers and streams.) The lesson: More is not necessarily better, even with an organic fertilizer. "A nutrient is a nutrient. It doesn't matter if it comes from an organic material or a chemical fertilizer. It has the same effect in a waterway," says Stephens. Never fertilize before a heavy rain, he advises. The best time is early in the morning.

8. End Erosion

Soil particles easily absorb nutrients—especially phosphorous—and when soil washes into rivers, the nutrients ride along. Cathy Carpenter, a retired colonel in the U.S. Army Nurse Corps, grows black cohosh, woodland hydrangea, and sassafras on her two-and-a-half-acre suburban lot near Quincy, Illinois. Her yard slopes at about 15 degrees, and when a nearby retention pond overflows, it drains into the creek out back and then into the Mississippi, 10 miles away. When Carpenter built her perennial beds, she framed the area with landscaping timbers, leveled the ground, and created raised beds. She even lined the timbers with landscaping cloth, which allows excess water to escape. "That way, if we get a gully washer, the soil is not leaching out."

9. Water Smarter

Replace sprinklers with soaker hoses, which put the water where it's needed—at plant roots. Soaker hoses reduce evaporation and waste. If you must use a sprinkler, water at daybreak, when it's cool and evaporation is slower. Avoid frequent, low-volume watering, which promotes shallow root growth and thatch buildup. Water deeply but less often. Your lawn will adapt, especially if you work to build better soil.

10. Build a Buffer

If you live along a waterway, avoid mowing to the water's edge. Instead, allow grasses and other herbaceous plants to grow tall and thick so they slow runoff and trap soil particles and nutrients. Tall grass may seem ugly and unkempt, but buffers can be managed like gardens and planted with perennials, flowers, shrubbery, and native grasses. George Tyler, who retired in 2002 and traded that small suburban plot in Bloomington for a home on Sugar Lake, near Aitkin, Minnesota, planted a riparian buffer strip along his waterfront. He says, "The ducks, cranes, beavers, and muskrats prefer my 150 feet of shoreline to my neighbors' manicured lawns that go right down to the lake."

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For more ways to create a healthy lawn and garden, and for simple steps you can take to protect birds and waterways, visit Audubon at Home at <http://www.audubonathome.org/>. This site also includes bird feeding tips, lists of plants that attract birds, and fun outdoor activities to do with kids.